

Texas Commission on Environmental Quality

INTEROFFICE MEMORANDUM

To: Javier Galvan, P.E.
Mechanical/Agricultural/Construction
Section

Date: July 27, 2010

Thru: Daniel Menendez, Team Leader
Air Dispersion Modeling Team (ADMT)

From: Rachel Gould and Albert Kennedy
ADMT

Subject: Modeling Audit – Building Materials Corporation of America (RN100788959)

- 1.0 Project Identification Information.
Permit Application Number: 7711A
NSR Project Number: 143272
ADMT Project Number: 3320
NSRP Document Number: 399077
County: Dallas
ArcReader Published Map: <\\Msgiswrk\APD\MODEL PROJECTS\3320\3320.pmf>

Modeling Report: Submitted by Trinity Consultants, July 2010, on behalf of Building Materials Corporation of America.

- 2.0 Report Summary. The modeling analysis is acceptable. The results are summarized below.

Table 1. Modeling Results for Minor NSR NAAQS AOI				
Pollutant	Scenario	Averaging Time	GLCmax (µg/m³)	De Minimis (µg/m³)
NO ₂	1	1-hr	29	10
	2		31	

The de minimis value of 10 µg/m³ listed in Table 1 was an interim de minimis value for 1-hr NO₂ at the time the modeling was conducted.

Table 2. Total Concentrations for Minor NSR NAAQS (Concentrations > De Minimis)						
Pollutant	Scenario	Averaging Time	GLCmax (µg/m³)	Background (µg/m³)	Total Conc. = [Background + GLCmax] (µg/m³)	Standard (µg/m³)
NO ₂	1	1-hr	83	103	186	188

	2	82	185	
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The maximum five-year average of the high-eighth-high (H8H) 1-hr average model concentrations was used as the GLCmax for each scenario.

The background concentration for 1-hr NO₂ was obtained from the EPA AIRS monitor 481130069 located at 1415 Hinton Street, Dallas, Dallas County. The applicant used a three-year average of the 98th percentile of the annual distribution of daily maximum 1-hr concentrations from 2007-2009. The use of this monitor is appropriate since it is the closest NO₂ monitor to the site (approximately 3 miles to the north), and the monitor is located in an urban area near roads and highways.

3.0 Land Use. Medium roughness and elevated terrain were used in the modeling analysis. These selections are consistent with the topographic map, DEMs, aerial photography, and the AERSURFACE analysis conducted by the ADMT. The selection of medium roughness is reasonable.

4.0 Modeling Emissions Inventory. The modeled emission point and area source parameters and rates were consistent with the modeling report. The source characterizations used to represent the sources were appropriate.

A NO_x to NO₂ conversion factor of 0.75 was applied to the modeled NO_x emission rates.

Two scenarios were modeled to show compliance with the NAAQS since EPNs 8 and 8A do not operate simultaneously. Scenario 1 included EPN 8A and all other sources except EPN 8. Scenario 2 included EPN 8 and all sources except EPN 8A.

5.0 Building Wake Effects (Downwash). Input data to Building Profile Input Program Prime (Version 04274) are consistent with the aerial photography, plot plan, and modeling report.

6.0 Meteorological Data.
Surface Station and ID: Dallas, TX (Station #: 3927)
Upper Air Station and ID: Stephenville, TX (Station #: 13901)
Meteorological Dataset: 1985, 1987-1990
Profile Base Elevation: 168 meters

7.0 Receptor Grid. The grid modeled was sufficient in density and spatial coverage to capture representative maximum ground-level concentrations.

8.0 Model Used and Modeling Techniques. AERMOD (Version 09292) was used in a refined screening mode.